

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 1 and 3-6 remain pending in the application subsequent to entry of this Amendment.

The claims have been amended in order to more particularly point out and distinctly claim that which applicants regard as their invention, to direct them to preferred aspects of the disclosure and to respond to the rejection made in items 3-4 of the Official Action.

More specifically, the composition of claim 2 has been incorporated into claim 1. In addition, an added requirement is that the SiO₂ content is more than 55 mol% but less than 63 mol%. This feature is based on the description in the last line of paragraph [0014] of applicants' specification. As a consequence, the values for SiO₂ in claim 3 are adjusted to agree with those in amended claim 1. Claim 2 has been canceled and the dependency of claim 3 adjusted accordingly. A minor typing error in claim 5, ("-7" should be shown in superscript) has been corrected.

The amendments to the claims as above discussed resolve the issues raised in items 3 and 4 of the Official Action.

With the amendments made to the claims the rejections of alleged anticipation in items 5-7 of the Official Action are resolved.

Claims 1, 2 and 4 to 6 as filed stand rejected as anticipated by Kishimoto (US 6,451,720) or Kishimoto (US 6,399,527). In Kishimoto '720, the content of SiO₂ is limited to 35 to 45 mol%. In Kishimoto '527, the content of SiO₂ is limited to 40 to 55 mol%. In contrast, the glass substrate of the present invention has an essential requirement that the content of SiO₂ is more than 55 mol% as specified in amended claim 1, so that the present invention is distinguishable from the inventions of the above two references and has novelty over these references. Therefore, the reason for the above rejection is no longer present; this rejection should be withdrawn.

In items 8 and 9 of the Action, claim 3 is rejected as "obvious" over Kishimoto '527 or Koyama US 6,306,786.

In the glass disclosed by Kishimoto '527, the content of SiO₂ is limited to 55 mol% or less for obtaining a desired Young's modulus.

In contrast, the glass substrate defined in amended claim 1 contains over 55 mol% but less than 63 mol% of SiO₂ for improving durability of the glass.

A substrate for an information recoding medium is required to have a high degree of surface smoothness and surface stability that is, freedom from changes of the glass surface. From this point of view, the present invention provides remarkably excellent substrates by improving durability.

While the Young's modulus decreases as the content of SiO₂ is increased, the decrease in Young's modulus is compensated for by the co-presence of ZrO₂ and TiO₂ also as defined in amended claim 1.

Koyama fails to disclose any glass containing over 55 mol% but less than 63 mol% of SiO₂ in the co-presence of ZrO₂ and TiO₂.

As explained above, in the present invention, more than 55 mol% of SiO₂ is introduced for improving the glass durability; the decrease in Young's modulus is compensated for by the co-presence of ZrO₂ and TiO₂. When the SiO₂ content exceeds 63 mol%, meltability of the glass is decreased, so that the content of SiO₂ is limited to less than 63 mol% as defined in amended claim 1.

Since both ZrO₂ and TiO₂ work to improve the durability, the present invention employs the use of SiO₂ in the above-described content range in the co-presence of ZrO₂ and TiO₂, so that one will realize excellent durability while retaining meltability and desired Young's modulus. Koyama is completely silent about this idea.

For the reasons mentioned above, applicants' claims are not obvious over Kishimoto or Koyama.

For the above reasons it is respectfully submitted that claims 1 and 3-6 define novel and inventive subject matter. Reconsideration and allowance are solicited. Should the examiner require further information, please contact the undersigned.

SHIRAISHI ET AL.
Appl. No. 10/510,446
November 29, 2005

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____



Arthur R. Crawford
Reg. No. 25,327

ARC:eaw
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100